Math 357
Long quiz 06

2024–04–10 (W)

Your name: _____

Let $K : K_0$ be a field extension, let $\alpha \in K$ be algebraic over K_0, and let $\sigma \in \mathrm{Aut}(K : K_0)$.

(a) Prove that α and $\sigma(\alpha)$ have the same minimal polynomial over K_0.

(b) Use part (a) to explain (and, if possible, refine) the statement, "Given $f \in K_0[t]$ and $\sigma \in \mathrm{Aut}(K : K_0)$, σ permutes the zeros of f."